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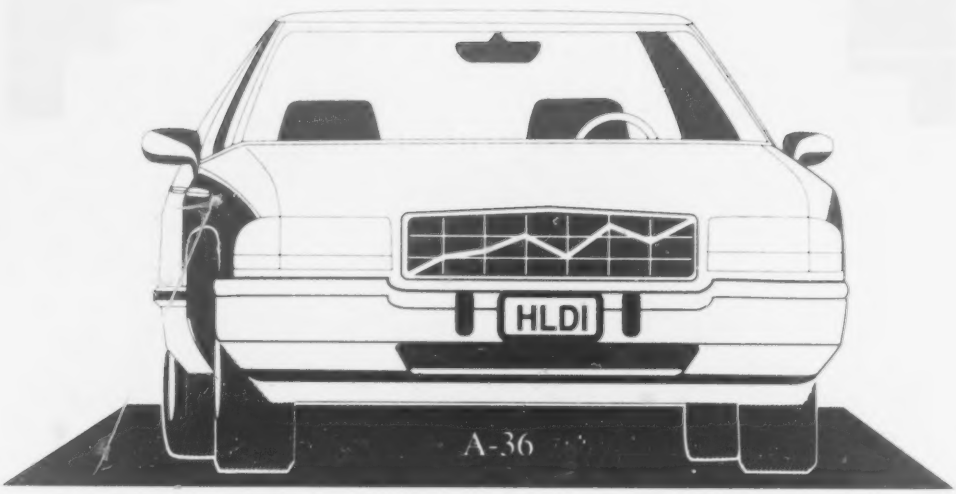

Loss Experience of High Performance And Standard Models Selected 1988-90 Cars

HIGHWAY LOSS DATA INSTITUTE

Insurance Special Report
A-36

Loss Experience of High Performance and Standard Models: Selected 1988-90 Cars

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SUMMARY

This Highway Loss Data Institute (HLDI) special report presents comparative loss results for 22 selected 1988-90 vehicle series that were available with high performance models. In each case the high performance version includes a more powerful engine in addition to other special features. Loss results are presented separately for collision, injury, and theft coverages.

PRINCIPAL FINDINGS

- For both collision and theft coverages, insurance losses were significantly higher for high performance models than for models not equipped with high performance features. For personal injury protection coverages, however, high performance models did not experience higher injury claim frequencies.

Collision Coverages

- Losses under collision coverages were substantially higher for the high performance models compared with other models of the same vehicle series.

- The average collision loss payment per insured vehicle year was higher for the high performance models in 21 of the 22 comparisons. Many of the differences were large, with high performance models of the Ford Thunderbird, Ford Mustang, and Porsche 944 registering collision losses more than 50 percent above those of other models of the same vehicles.

- Collision claim frequencies were higher for high performance models in 16 of the 22 vehicle series comparisons. However, the increases were typically small; the high performance models of the Ford Thunderbird registered the largest difference (31 percent higher).

- The average loss payment per collision claim was higher for the high performance models in 21 of the 22 selected vehicle series. Differences in the average collision loss payments were much more pronounced than were differences in frequency, with two-thirds of them amounting to 15 percent or more.

Personal Injury Protection Coverages

- Of the 22 series, only 12 had sufficient exposure to allow comparisons of the injury losses. No clear pattern of injury claim frequencies is evident in these comparisons.

Theft Coverages

- The theft loss experience of high performance models was much worse than that of other models. Fifteen vehicle series had sufficient exposure to compare theft losses for high performance and other models of the same series.

- The average theft loss payment per insured vehicle year was higher for the high performance models in 12 of the 15 vehicle series, and many of the differences were large. The theft losses for the V-8 equipped Ford Mustang models were almost six times those of all other Mustangs.

- High performance models had substantially higher theft claim frequencies in 11 of the 15 comparisons. Theft claim frequencies for the Ford Mustang models equipped with a 5.0 liter V-8 engine were more than double those for the other Mustang models.

- In all but one of the 15 comparisons, high performance models experienced higher average loss payments per theft claim. The average loss payment per claim for the high performance models tended to be much worse, with three series (Ford Probe, Ford Mustang, and Volkswagen Golf) having results that were more than double those for standard models.

INTRODUCTION

The Highway Loss Data Institute (HLDI) is a nonprofit, public service organization that gathers, processes, and publishes insurance data concerned with human and economic losses resulting from owning and operating motor vehicles -- especially concerning the ways such losses vary among different kinds of vehicles.

HLDI has previously published reports on the relationship between insurance losses and engine specifications. An earlier report, *Relationships Between Injury and Collision Losses and Engine Options for Selected 1977-79 Compact Cars* (A-15), found that cars with the most powerful engines had the worst loss experience. The report did not find a consistent relationship for injury losses. Another report, *Injury and Collision Losses by Engine Option for Selected 1983 Models* (A-23), found that average loss payments per collision claim were substantially higher for cars equipped with more powerful engines than for those equipped with standard engines. The report found no consistent relationship between engine size and the frequency of injury or collision claims. Neither of these reports addressed theft losses.

This report compares insurance losses for selected 1988-90 passenger cars. The 22 vehicles included in this report represent all of the 1988-90 cars for which a separately identifiable high performance model existed and which had sufficient exposure in the HLDI data base to compute reliable results. The results for the high performance models are compared with those for all other models of the same vehicle. In all cases, the performance models are equipped with more powerful engines. For purposes of this report, high performance models are vehicles that have more powerful engines as standard equipment than other models of the same series; other features, such as more aerodynamic body panels and specialized trim options, may also be standard equipment. Half of the vehicles are imports and half are domestically produced. Because they are essentially the same vehicle, the results for the Plymouth Laser, Eagle Talon, and Mitsubishi Eclipse were combined and are reported as Plymouth Laser results. (A complete list of the selected series and model years is given in Appendix A.)

Losses are compared separately for collision, injury, and theft coverages. The reliability of individual vehicle results presented in this report is based upon the amount of exposure compiled for that vehicle and is measured in insured vehicle years. Larger amounts of exposure yield more reliable results. For collision results, all 22 vehicle series had high performance and other models with sufficient exposure (1,000 vehicle years) to permit comparisons. For injury results, only 12 of the series met the 5,000 insured vehicle years of exposure necessary to present reliable comparisons. For theft results, 15 of the 22 vehicle series had more than the required minimum of 8,000 insured vehicle years of exposure for both models.

The results in this report are standardized to minimize differences that might be attributed to variations in the mix of deductible amounts and driver age groups among different vehicles. Both the frequency and average size of insurance losses vary with the deductible amount and the age group of the driver. Standardization ensures that the mix of these nonvehicle factors is the same for each result. Therefore, to the extent that age distribution within each driver age group and dollar amounts within each deductible group do not vary substantially for different vehicles, these effects will not bias comparison among the various results. Other nonvehicle factors have not necessarily been eliminated. (For a complete discussion of standardization, see the HLDI Technical Appendix.)

This report is based on insurance loss data supplied by 12 insurers: Aetna, Allstate, Fireman's Fund, GEICO, Kemper, Liberty Mutual, Nationwide, Prudential, Safeco, State Farm, Travelers, and USAA. Results presented in this report are based on the first three years of experience for the 1988 models, the first two years for the 1989 models, and for the initial year of experience for the 1990 models.

It is intended that the dissemination of this and other HLDI reports will contribute to research into ways for reducing vehicle related damage to people and property and that it will inform the public about differences in the loss experience produced by different kinds of vehicles.

RESULTS AND DISCUSSION

Collision Coverages

For the selected vehicles, Table 1 shows the exposure, claim frequency, average loss payment per claim, and average loss payment per insured vehicle year for collision coverage. Results for high performance models are given in bold type. All 22 series had sufficient exposure to permit comparisons of high performance and other models. Overwhelmingly, the high performance models experienced higher collision claim frequencies and higher average loss payments per collision claim.

Almost three-fourths of the high performance models registered higher claim frequencies than other models of the same vehicle series. The Ford Thunderbird Turbo and Super Coupe models had collision claim frequencies that were 31 percent higher than that of all other Thunderbird models. Only the Mazda RX-7 Turbo and the Ford Taurus SHO had significantly lower collision claim frequencies compared with other models.

All of the high performance models except the Plymouth Laser had average collision loss payments per claim that were higher than the averages for their other models. The differences in the average loss payment per claim were significantly larger than were the differences in claim frequencies. The Porsche 944 Turbo model had an average loss payment per claim that was 65 percent higher than the non-turbo models.

The resulting average loss payments per insured vehicle year were higher for the high performance models in 21 of the 22 comparisons.

Figure 1 (domestic cars) and Figure 2 (imported cars) highlight the differences in the average loss payment per insured vehicle year for the high performance models and the other models. As shown in Figure 1, the high performance versions

Figure 1
Percentage Difference in Average Collision Loss Payment Per Insured Vehicle Year for High Performance Vs. Other Models: Domestic Cars

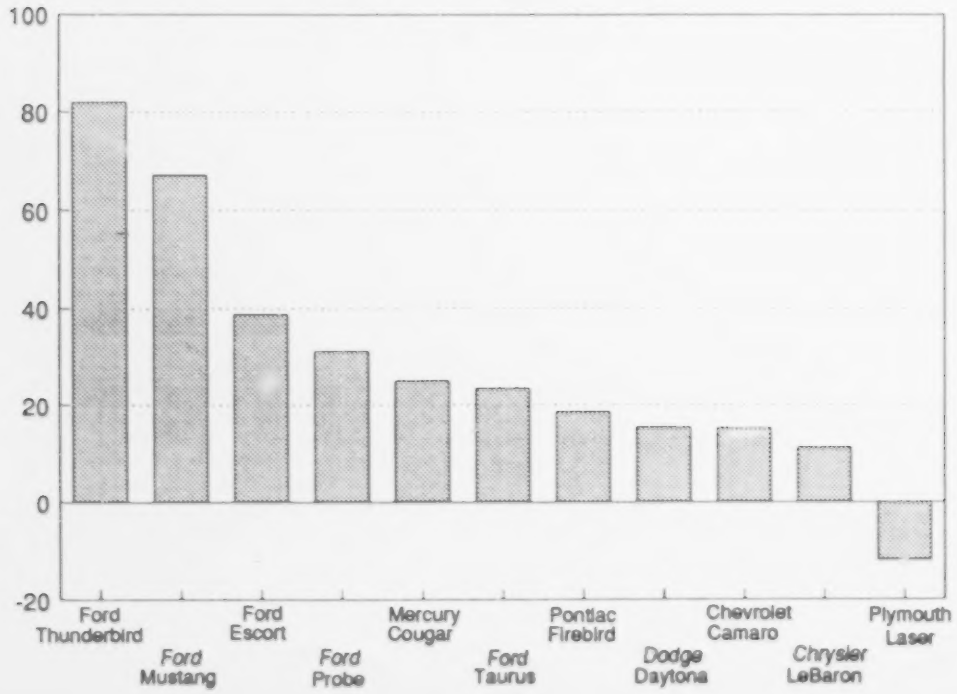


Table 1
Collision Losses - 1988-90 Model Years
High Performance vs. Other Models

Make	Series	Exposure[1]	Claim Frequency[2]	Average Loss Payment Per Claim	Average Loss Payment Per Insured Vehicle Year
Chevrolet	Camaro	65,716	12.3	$ 2,206	$ 272
	Camaro V8	**76,802**	**12.2**	**2,563**	**313**
Chrysler	LeBaron	41,518	11.0	2,134	235
	LeBaron Turbo	**25,246**	**11.2**	**2,326**	**261**
Dodge	Daytona	86,300	12.5	2,260	283
	Daytona Turbo	**25,761**	**12.5**	**2,603**	**326**
Ford	Escort	146,148	10.4	2,145	223
	Escort GT	**51,864**	**12.5**	**2,484**	**309**
Ford	Mustang	133,650	10.6	2,219	236
	Mustang 5.0L	**148,378**	**12.3**	**3,206**	**394**
Ford	Probe	109,942	10.9	2,402	261
	Probe GT	**20,569**	**10.8**	**3,180**	**342**
Ford	Taurus	113,346	8.2	2,138	175
	Taurus SHO	**7,651**	**7.4**	**2,939**	**216**
Ford	Thunderbird	142,419	8.9	2,243	199
	Thunderbird Turbo/Super	**39,974**	**11.7**	**3,099**	**362**
Honda	CRX	52,317	13.6	2,051	279
	CRX-SI	**33,043**	**13.7**	**2,425**	**332**
Honda	Prelude	40,165	11.5	2,141	246
	Prelude SI	**84,115**	**11.4**	**2,238**	**254**
Mazda	MX-6	58,392	10.1	2,647	266
	MX-6 Turbo	**19,603**	**10.3**	**2,978**	**308**
Mazda	RX-7	31,105	11.8	2,434	287
	RX-7 Turbo	**5,135**	**10.8**	**3,130**	**339**

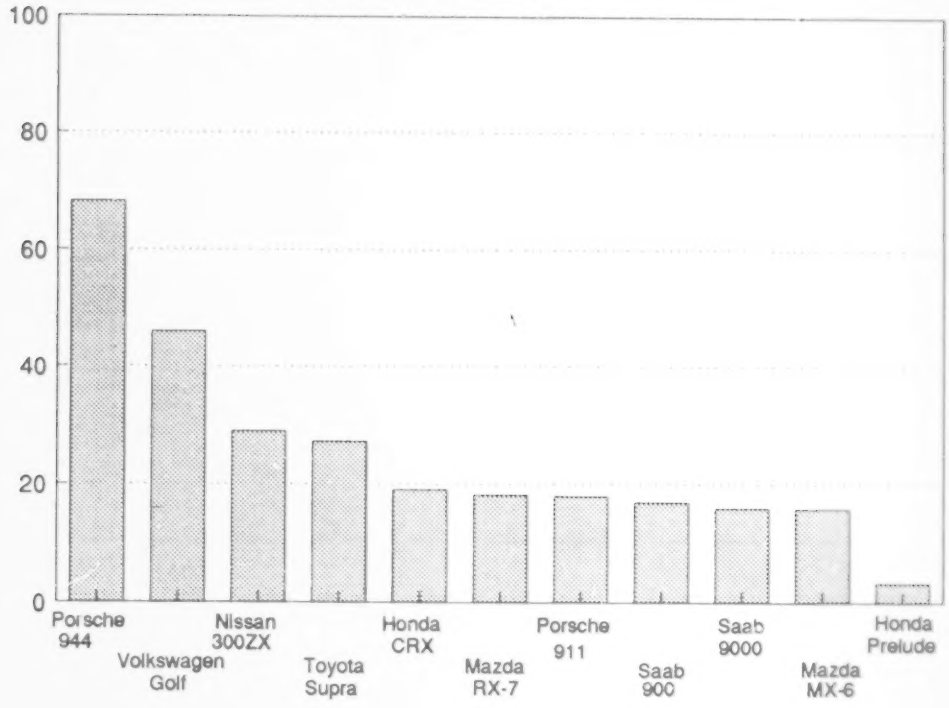
Table 1 (cont'd)
Collision Losses - 1988-90 Model Years
High Performance vs. Other Models

Make	Series	Exposure[1]	Claim Frequency[2]	Average Loss Payment Per Claim	Average Loss Payment Per Insured Vehicle Year
Mercury	Cougar	144,632	9.4	2,299	217
	Cougar XR-7	**16,265**	**10.5**	**2,584**	**271**
Nissan	300ZX	26,356	10.6	3,115	329
	300ZX Turbo	**4,090**	**12.2**	**3,473**	**424**
Plymouth[3]	Laser	9,682	12.4	2,646	329
	Laser Turbo	**28,143**	**13.0**	**2,236**	**290**
Pontiac	Firebird	36,130	12.8	2,153	276
	Firebird V8	**55,688**	**12.9**	**2,530**	**327**
Porsche	911	6,360	5.4	5,925	318
	911 Turbo	**1,319**	**5.5**	**6,807**	**375**
Porsche	944	5,171	12.0	4,085	489
	944 Turbo	**1,894**	**12.2**	**6,747**	**823**
Saab	900	26,553	10.9	3,093	338
	900 Turbo	**9,033**	**11.8**	**3,337**	**395**
Saab	9000	6,954	10.4	2,729	284
	9000 CD/Turbo	**14,306**	**10.7**	**3,078**	**329**
Toyota	Supra	27,727	10.9	3,183	346
	Supra Turbo	**3,516**	**11.7**	**3,766**	**440**
Volkswagen	Golf	13,573	10.5	2,082	218
	GTI	**4,431**	**12.1**	**2,623**	**318**

1. In insured vehicle years.
2. Per 100 insured vehicle years.
3. Results for Plymouth Laser include those for the essentially similar Eagle Talon and Mitsubishi Eclipse models.

Note: Results for high performance models are given in bold type.

Figure 2
Percentage Difference in Average Collision Loss Payment Per Insured Vehicle Year for High Performance Vs. Other Models: Imported Cars



of all but the Plymouth Laser registered greater collision losses. The vehicle series with the largest differences between the high performance and other models were the six Ford Motor Company series. The biggest difference was turned in by the Ford Thunderbird Turbos and Super Coupes, which experienced losses that were 82 percent higher than for these other Thunderbird models. Similar results are shown in Figure 2, with all 11 of the imported high performance models registering higher average loss payments per insured vehicle year than their comparison models. The increased collision loss results for the imported high performance models ranged from 68 percent for the Porsche 944 Turbo to 3 percent for the Honda Prelude Si.

Personal Injury Protection Coverages

Table 2 presents exposure (in insured vehicle years) and compares the injury claim frequencies (per 1,000 insured vehicle years) for standard models and high performance models of 12 vehicle series. No comparisons are available for the other 10 series due to insufficient exposure (less than 5,000 insured vehicle years). Claim frequencies are shown for all injury claims and for claims greater than $250, $500, and $1,000 respectively. For the 12 series that have comparative results, 9 registered lower overall injury claim frequencies for the high performance model. Three high performance models, those for the Ford Escort, Ford Thunderbird, and Mercury Cougar, had higher injury claim frequencies than their corresponding models. Most of the differences in injury claim frequencies between the high performance version and the other models were small. For injury claims greater than $500, two of the high performance models had higher injury claims frequencies than the corresponding models, two registered lower claim frequencies, and two were essentially the same.

Table 2
Personal Injury Protection (PIP) Losses - 1988-90 Model Years
High Performance vs. Other Models

Make	Series	Exposure[1]	Claim Frequency by Size of Claim[2]			
			All	>$250	>$500	>$1,000
Chevrolet	Camaro	29,471	27.9	18.8	14.9	11.1
	Camaro V8	**29,462**	**25.0**	**17.4**	**13.7**	**10.2**
Chrysler	LeBaron	18,964	22.7	14.1		
	LeBaron Turbo	**10,161**	**21.1**	**12.9**		
Dodge	Daytona	37,922	29.7	18.2		
	Daytona Turbo	**10,300**	**24.9**	**16.3**		
Ford	Escort	54,015	29.1	18.7	14.6	
	Escort GT	**20,323**	**30.0**	**20.8**	**16.3**	
Ford	Mustang	60,015	26.9	17.7	13.5	9.9
	Mustang 5.0L	**64,390**	**24.7**	**17.0**	**13.6**	**10.3**
Ford	Probe	44,727	23.4			
	Probe GT	**8,222**	**20.3**			
Ford	Thunderbird	57,527	17.1	11.6	9.2	
	Thunderbird Turbo/Super	**15,774**	**19.2**	**13.0**	**10.1**	
Honda	CRX	21,853	28.5	18.7		
	CRX-SI	**13,364**	**25.6**	**17.0**		
Honda	Prelude	17,388	19.7	13.9	10.8	
	Prelude SI	**36,884**	**19.4**	**12.2**	**9.2**	
Mazda	MX-6	24,847	21.4			
	MX-6 Turbo	**8,315**	**20.2**			
Mercury	Cougar	64,634	19.8			
	Cougar XR-7	**7,619**	**21.6**			
Pontiac	Firebird	15,547	24.2	15.8	12.1	
	Firebird V8	**23,555**	**21.8**	**14.7**	**12.0**	

1. In insured vehicle years.
2. Per 1,000 insured vehicle years.

Note: Results for high performance models are given in bold type.

Theft Coverages

The theft loss experience of high performance models was much worse than that of corresponding models. In general, claim frequencies were higher and average loss payments per theft claim were significantly higher, resulting in large differences in the average loss payment per insured vehicle year for most series. Table 3 shows exposure, theft claim frequency, average loss payment per theft claim, and average theft loss payment per insured vehicle year for the 15 series with at least 8,000 insured vehicle years of exposure for each group of cars. Theft claim frequencies were higher for 11 of the high performance models compared with the other corresponding models. In many cases, the differences were dramatic. The high performance models of the Ford Mustang had theft claim frequencies that were two and one-third times the claim frequencies of other Mustang models; the Ford Escort GT claim frequency was nearly double that for other Ford Escort models; and the Ford Thunderbird Turbo and Super Coupe had an 86 percent higher theft claim frequency than other Thunderbird models.

All but one of the high performance models had higher loss payments per theft claim. Again, the only exception to this pattern was the Plymouth Laser, which had a lower average loss payment for the high performance version. The Ford Probe GT and the 5.0 liter V-8 equipped Ford Mustang models had average loss payments per theft claim that were more than two and one-half times the averages for other models of these vehicles.

The resulting average theft loss payments per insured vehicle year were higher for the high performance models in 12 of the 15 comparisons. As shown in Figure 3, theft losses under this comprehensive measure were almost 500 percent higher for the Ford Mustang models equipped with the 5.0 liter V-8 engine than for other Mustang models. Theft losses for the Volkswagen GTI were over 300 percent higher than for other Golf models and the Ford Escort GT had losses more than 200 percent higher than other Escorts. Only the high performance models of the Chrysler LeBaron, Mazda MX-6, and the Plymouth Laser had lower average theft loss payments per insured vehicle year than their corresponding models.

Figure 3
Percentage Difference in Average Theft Loss Payment Per Insured Vehicle Year for High Performance Vs. Other Models

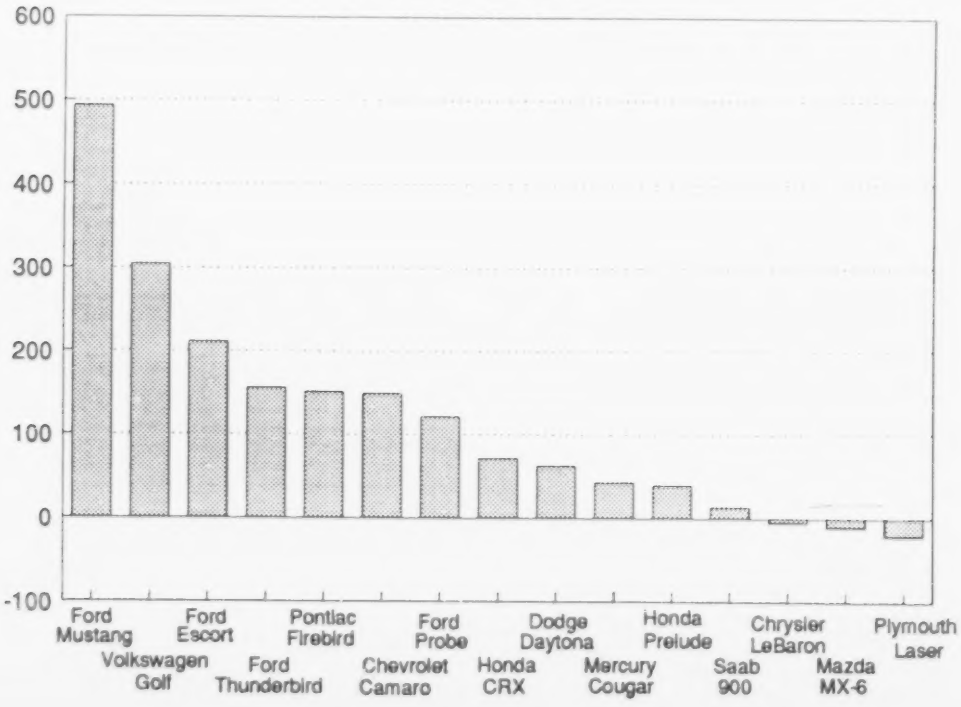


Table 3
Theft Losses - 1988-90 Model Years
High Performance vs. Other Models

Make	Series	Exposure[1]	Claim Frequency[2]	Average Loss Payment Per Claim	Average Loss Payment Per Insured Vehicle Year
Chevrolet	Camaro	66,042	18.5	$ 2,863	$ 53
	Camaro V8	**77,252**	**27.5**	**4,785**	**132**
Chrysler	LeBaron	41,612	10.7	2,095	22
	LeBaron Turbo	**25,307**	**7.6**	**2,811**	**21**
Dodge	Daytona	86,580	8.4	2,543	21
	Daytona Turbo	**25,863**	**10.0**	**3,372**	**34**
Ford	Escort	146,635	6.7	1,292	9
	Escort GT	**51,983**	**12.7**	**2,179**	**28**
Ford	Mustang	134,234	8.1	1,784	15
	Mustang 5.0L	**149,365**	**19.0**	**4,685**	**89**
Ford	Probe	110,179	11.8	1,171	14
	Probe GT	**20,628**	**9.6**	**3,250**	**31**
Ford	Thunderbird	142,947	4.9	5,063	25
	Thunderbird Turbo/Super	**40,111**	**9.1**	**6,957**	**64**
Honda	CRX	52,496	18.6	1,265	24
	CRX-SI	**33,198**	**27.6**	**1,487**	**41**
Honda	Prelude	40,242	10.6	3,917	41
	Prelude SI	**84,343**	**13.0**	**4,404**	**57**
Mazda	MX-6	58,523	10.2	2,683	27
	MX-6 Turbo	**19,629**	**8.1**	**3,037**	**24**
Mercury	Cougar	144,995	6.2	5,341	33
	Cougar XR-7	**16,312**	**8.1**	**5,800**	**47**
Plymouth[3]	Laser	9,693	11.7	2,781	33
	Laser Turbo	**28,199**	**15.7**	**1,648**	**26**
Pontiac	Firebird	36,277	20.4	2,725	55
	Firebird V8	**56,062**	**29.0**	**4,771**	**138**
Saab	900	26,609	18.8	1,614	30
	900 Turbo	**9,050**	**14.2**	**2,390**	**34**
Volkswagen	Golf	13,668	60.1	776	47
	GTI	**4,475**	**103.3**	**1,840**	**190**

1. In insured vehicle years.
2. Per 1,000 insured vehicle years.
3. Results for Plymouth Laser include those for the essentially similar Eagle Talon and Mitsubishi Eclipse models.

Note: Results for high performance models are given in bold type.

APPENDIX A

1988-90 Passenger Cars with High Performance Models

Make	Series	Years	Body Style	Size Class	Performance Model
Chevrolet	Camaro	88-90	SP	M	Equipped with V-8 engine
Chrysler	LeBaron	88-90	2DR	M	Turbo
Dodge	Daytona	88-90	2DR	S	Turbo
Eagle	Talon[1]	1990	2DR	S	Equipped with turbo-charged engine
Ford	Escort	88-90	2DR	S	GT
Ford	Mustang[2]	88-90	SP	M	Equipped with V-8 engine
Ford	Probe	88-90	2DR	S	GT
Ford	Taurus	89-90	4DR	M	SHO
Ford	Thunderbird	88-90	2DR	L	Turbo and Supercoupe
Honda	Civic CRX	88-90	SP	S	Si
Honda	Prelude	88-90	2DR	M	Si
Mazda	MX-6	88-90	2DR	S	Turbo
Mazda	RX-7	88-90	SP	S	Turbo
Mercury	Cougar	88-90	2DR	L	X R-7
Mitsubishi	Eclipse[1]	1990	2DR	S	Equipped with turbo-charged engine
Nissan	300ZX[3]	88-90	SP	S	Turbo
Plymouth	Laser	1990	2DR	S	Equipped with turbo-charged engine
Pontiac	Firebird	88-90	SP	M	Equipped with V-8 engine
Porsche	911	88-89	SP	S	Turbo
Porsche	944	88-89	SP	S	Turbo
Saab	900	88-90	2DR	S	Turbo
Saab	9000	88-90	LX	M	Turbo
Toyota	Supra	88-90	SP	M	Turbo
Volkswagen	Golf	88-90	2DR	S	GTI

1. Includes 4-wheel drive
2. Includes convertible
3. Includes 2+2

Note: Results were combined for the essentially similar Plymouth Laser, Eagle Talon, and Mitsubishi Eclipse models.

APPENDIX B

Definitions

Average Loss Payment per Claim -- The total of all loss payments made for the claims for a group of vehicles, divided by the number of claims paid.

Average Loss Payment per Insured Vehicle Year -- For a group of vehicles, the product of Claim Frequency and Average Loss Payment per Claim, expressed as dollars per insured vehicle year. It should be noted that this definition differs from the commonly used insurance term, pure premium, but yields similar results.

Claim Frequency -- The number of claims for a group of vehicles, divided by the exposure for that group; expressed as claims per one hundred or one thousand insured vehicle years.

Collision Coverage -- As defined in insurance contracts, the coverage under which people insure their own vehicle against loss caused by collision.

Deductible Amount -- That portion of the collision or theft damage cost borne by the policyholder. For computing results, deductible amounts are split into two groups, a low deductible group and a high deductible group.

Exposure -- The time interval an individual vehicle is insured. Exposure for a group of vehicles is expressed in units of insured vehicle years.

First-Party Coverage -- An insurance coverage under which the policyholder collects compensation for his losses from his own insurer regardless of fault.

High Performance Models -- For purpose of this insurance special report, high performance models are those vehicles which have more powerful engines as standard equipment than other models of the same series. In addition to the more powerful engines, other features, such as more aerodynamic body panels and specialized trim options, may be standard equipment on the high performance models.

Loss Payment -- That portion of the insurance loss cost borne by the insurer; in general, the total loss cost minus the deductible amount.

No-Fault Auto Insurance -- An auto insurance plan in which each driver/owner accepts financial responsibility for some or all losses sustained by himself, pedestrians hit by him, and occupants of his own vehicle in return for which he enjoys some immunity from liability for losses to third-party persons.

Operator Age Group -- The factor that distinguishes those vehicles with a youthful rated driver from those vehicles without a youthful rated driver (see Youthful Operator).

Personal Injury Protection (PIP) Coverage -- First-party no-fault coverage in which an insurer pays, within the specified limits, the medical, hospital, and other expenses of the insured, others in his vehicle, and pedestrians struck by him.

Rated Driver -- The driver who, for insurance purposes, is considered to represent the greatest loss potential for the insured vehicles.

Theft Coverage -- The coverage under which people insure their own car against loss caused by partial or total theft.

Youthful Operator -- All males under 25 years of age and all unmarried females under 25 years of age.

SELECTED PUBLICATIONS

Insurance Injury Report, Passenger Cars, Vans, Pickups, and Utility Vehicles, September 1990.

Insurance Collision Report, Passenger Cars, Vans, Pickups, and Utility Vehicles, 1990 Models: One Year Results, January 1991.

Insurance Collision Report, Passenger Cars, Vans, Pickups, and Utility Vehicles, 1989 Models: Two Year Results, January 1991.

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A-7 *Automobile Insurance Losses, Collision Coverages; Annual Increases and Seasonal Variations 1972, 1973, 1974 and 1975 Models*, June 1976.

A-9 *Automobile Insurance Losses, Collision Coverage; A Comparison of Collision Claim Size Distributions for 1974-76 Models*, November 1977.

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A-18 *Insurance Losses, Theft Coverage; The Distribution of Theft Loss Payment Amounts; Passenger Cars, Vans, Pickups, and Utility Vehicles; 1981 Models During Their First Year, 1980 Models During Their First Two Years, 1979 Models During Their First Three Years*, June 1982.

A-19 *Insurance Losses, Theft Coverages; A Comparison of the Theft Loss Experience of General Motors Passenger Cars With and Without Factory-Installed Theft Deterrent Systems; 1980-1981 Models*, January 1983.

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A-21 *Insurance Losses, Personal Injury Protection Coverages, Injury Claim Frequencies for Volkswagen Rabbits with Automatic and Manual Seat Belts, 1981, and 1982 Models*, April 1984.

A-22 *Insurance Losses, Collision Coverages, An Analysis of Salvage Credits, 1977 Through 1982 Model Year Cars*, July 1984.

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A-26 *Consistency of Model Year Injury Claim Frequency Results for Selected 1981-1983 Models*, May 1986.

A-27 *A Preliminary Evaluation of New York and New Jersey Insurance Injury Claim Results Before and After Enactment of Mandatory Seat Belt Legislation; 1983-85 Models*, May 1986.

A-28 *Insurance Injury Loss Experience in Eight States with Seat Belt Laws, 1983-86 Models*, July 1988.

A-29 *Insurance Losses Based on Garaging Location, 1985-87 Models*, June 1988.

A-30 *Automobile Insurance Losses, A Comparison of California and National Results*, May 1988.

A-31 *The Effect of Vehicle Component Parts Marking on Theft*, December 1989.

A-32 *Automobile Theft Losses By Size of Claim and in Selected States*, December 1989.

A-33 *Noncrash Fire Losses, 1986-88*, December 1989.

A-34 *An Analysis of Total Losses, 1984-88 Models*, May 1990.

A-35 *Automobile Theft Losses in Selected Cities and Border Regions*, October 1990.

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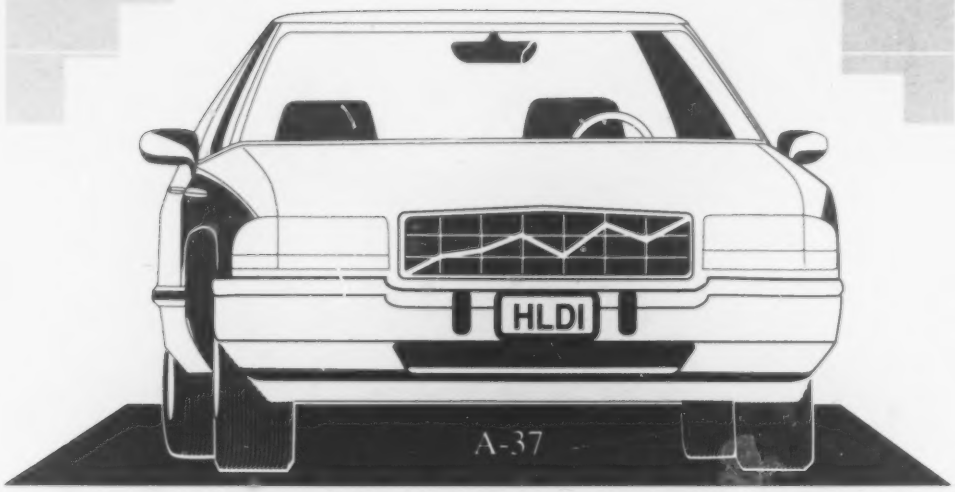

A-37

Injury and Collision Loss Experience by Rated Driver

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Insurance Special Report
A-37

Injury and Collision Loss Experience by Rated Driver

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SUMMARY

This Highway Loss Data Institute (HLDI) special report presents comparative loss results for passenger cars insured for use by various rated driver groups. First party losses under both personal injury protection coverages and collision coverages are presented. Rated drivers are classified by age, gender, and marital status into five categories: male teenagers (males age 20 or less), female teenagers (females age 20 or less), other youthful male operators (males age 21-24), other youthful female operators (unmarried females age 21-24), and adults (married females age 21-24 and all persons age 25 and older). It should be noted that the rated driver and the actual driver involved in a claim are not always the same.

PRINCIPAL FINDINGS

- The injury claim frequencies and overall collision losses of cars insured for teenagers were more than double those of cars insured for adults.

Personal Injury Protection Coverages

- The worst injury claim frequencies were registered for small sports cars and small two-door and four-door models insured for female teenagers.

- Injury claim frequencies for all rated driver categories, in general, were worse for smaller size vehicles. The only notable exception was the higher injury losses generated by midsize sports models compared with small sports models.

- Cars insured for female teenagers had much higher injury claim frequencies than did those insured for male teenagers. This pattern held for nearly all body style and size class groups and was also evident for the other youthful operator categories.

- Although cars insured for female teenagers generate more injury claims, the cars insured for male teenagers generate higher percentages of more costly injury claims.

Collision Coverages

- Compared with the experience of cars insured for adults, cars insured for teenagers had a 90 percent higher collision claim frequency and a 16 percent higher average loss payment per collision claim. The average loss payment per insured vehicle year was 121 percent higher.

- Cars insured for male teenagers had much higher collision losses than did those insured for female teenagers. This pattern was reflected in the losses registered by cars insured for other youthful operators as well.

- Collision losses for three rated driver groups (all teenagers, all other youthful operators, and adults) were highest for small and midsize sports models and lowest for large station wagons/passenger vans.

INTRODUCTION

The Highway Loss Data Institute (HLDI) is a nonprofit, public service organization that gathers, processes, and publishes insurance data concerned with human and economic losses resulting from owning and operating motor vehicles -- especially concerning the ways such losses vary among different kinds of vehicles.

One of the major nonvehicle factors related to insurance losses is the age of the driver. This report presents comparative results for passenger cars insured for use by different driver age groups for both personal injury protection and collision coverages.

The insured driver age groups used in this report are determined by the rating category provided by the insurers issuing the policies. For automobile insurance purposes, each vehicle has only one rated driver. In this report, the driver's age group is that of the rated driver. The driver rating is, in some cases, determined by gender and marital status as well as age.

It is important to keep in mind that the rated driver and the actual driver involved in a claim are not always the same. For example, in a household with two parents and an 18 year old son and three vehicles, each one of the three vehicles will be assigned to one driver rating category, although each of the three drivers may drive any one of the vehicles.

In this report, the insured driver groups are categorized as shown below:

Rated Driver	Age, Gender, and Marital Status
Male teenager	Males age 20 or less
Female teenager	Females age 20 or less
Other youthful male operator	Males ages 21-24
Other youthful female operator	Unmarried females ages 21-24
Adult	Married females ages 21-24 and all persons age 25 and older

Collision results are for 1988 model year cars in their first three years of availability. Injury results combine the first three years of experience for 1987 and 1988 model year cars with the first two years of experience for 1989 model year vehicles. It was necessary to combine injury data for three model years in order to provide sufficient exposure to calculate reliable results. The reliability of the results presented in this report is based upon the amount of exposure compiled, which is measured in insured vehicle years. Larger amounts of exposure yield more reliable results.

Injury data are for personal injury protection coverages that provide first-party insurance against medical and other types of losses in no-fault insurance states. Injury coverage results contained in this report are for the 20 states noted in Appendix A.

This report is based on injury and collision loss data supplied by 12 insurers: Aetna, Allstate, Fireman's Fund, GEICO, Kemper, Liberty Mutual, Nationwide, Prudential, SAFECO, State Farm, Travelers, and USAA.

It is intended that the dissemination of this and other HLDI reports will contribute to research into ways for reducing vehicle related damage to people and property and that it will inform the public about differences in the loss experience produced by different kinds of vehicles.

RESULTS AND DISCUSSION

Personal Injury Protection Coverage Results

Figure 1 shows the relative overall injury claim frequencies registered by cars insured for various rated driver categories. The results are presented relative to the experience of cars insured for use by adults. The highest overall injury claim frequencies were for cars insured for female teenagers. This group had a relative claim frequency 135 percent higher than the injury claim frequency of cars insured for adults. Cars insured for male teenagers experienced injury claims at a 79 percent higher rate than cars insured for adults. The overall injury claim frequency for cars insured for all teenagers was more than double the injury experience for cars insured for adults. The injury claim frequency for cars insured for other youthful operators was much better than for cars insured for teenagers, but it was still 63 percent higher than for cars insured for adults. Cars insured for other youthful female operators experienced an 83 percent higher injury claim rate than cars insured for adults. Cars insured for other youthful male operators had an injury claim frequency 35 percent higher than cars insured for adults.

Figure 2 displays the results of an analysis of the distribution of injury claims by size of the medical payments. It shows that cars insured for male teenagers had higher percentages of claims exceeding both $5,000 and $10,000 in medical payments than did cars insured for female teenagers. Among claims related to cars insured for male teenagers, 8.6 percent exceeded $5,000 and 2.8 percent exceeded $10,000. The corresponding percentages of claims related to cars insured for female teenagers were 7.1 and 1.8. Although cars insured for female teenagers generate more injury claims, the cars insured for male teenagers generate proportionately more costly injury claims. This same pattern also applies for the other youthful rated driver categories.

Figure 1
Injury Results by Rated Driver Group
Relative Injury Claim Frequency

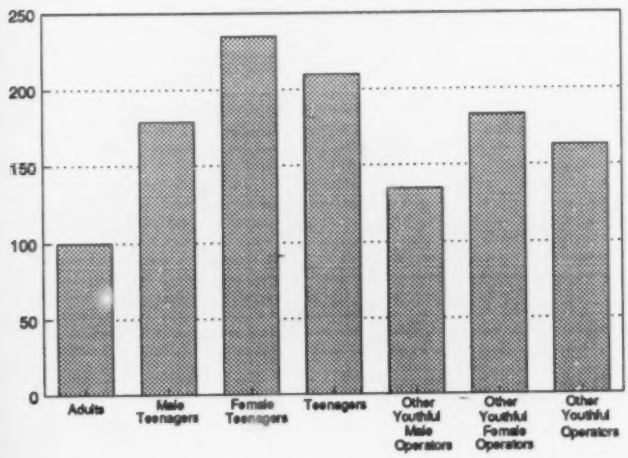

Figure 2
Distribution of Large Injury Claims
Personal Injury Protection Coverage

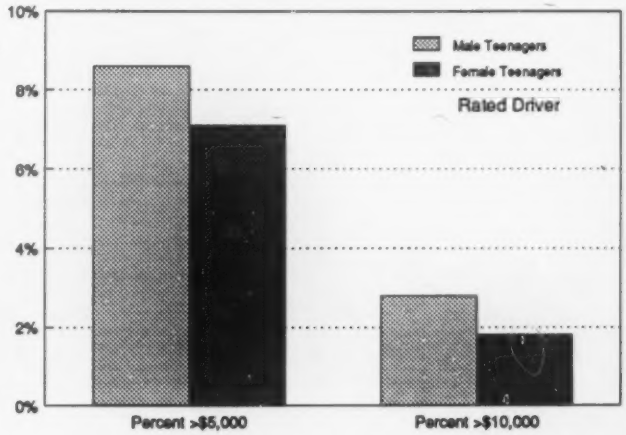

Table 1 gives the exposure (in insured vehicle years) and the relative overall injury claim frequencies for cars insured for various rated driver categories. All results are presented relative to the experience of the adult category for all passenger cars. The results are given by body style for small, midsize, and large cars with at least 5,000 insured vehicle years of exposure.

Cars insured for teenagers represented about four percent of the total exposure presented in Table 1. Cars insured for other youthful operators made up approximately seven percent, and those insured for adults made up 89 percent of total exposure.

For both the teenage and other youthful rated driver groups, the pattern of higher injury claim frequencies for cars insured for females than for males was reflected throughout the body style and size class combinations. The only exception is the large station wagon/passenger van group insured for teenagers. The highest injury claim frequencies were registered by small cars and midsize sports models insured for female teenagers; injury claims for these models occurred at more than two and one-half times the rate for cars insured for adults.

Table 1
Relative Claim Frequency
Personal Injury Protection Coverages -- 1987-89 Passenger Cars

1987-89 Passenger Cars	Exposure	Adults	Male Teen-agers	Female Teen-agers	Teen-agers	Other Youthful Male Operators	Other Youthful Female Operators	Other Youthful Operators
All Cars	11,601,555	100*	179	235	210	135	183	163
Small Cars								
Two-Door Models	1,665,860	136	202	276	248	148	196	178
Four-Door Models	1,548,717	134	203	269	243	155	201	184
Station Wagons/ Passenger Vans	222,050	92	-	-	135	-	-	120
Sports Models	232,617	91	192	272	237	141	190	171
Midsize Cars								
Two-Door Models	1,091,736	114	194	234	217	132	169	153
Four-Door Models	3,106,788	97	150	170	160	114	162	141
Station Wagons/ Passenger Vans	410,757	77	-	-	121	-	-	124
Sports Models	523,259	118	219	251	236	131	181	154
Luxury Models	435,686	73	92	104	98	73	111	96
Large Cars								
Two-Door Models	76,120	84	-	-	-	-	-	-
Four-Door Models	804,377	66	103	117	110	90	138	110
Station Wagons/ Passenger Vans	942,135	67	114	96	106	78	106	89
Luxury Models	541,453	65	-	-	95	-	-	75
Percent of Exposure		89.1	1.7	2.2	3.9	2.9	4.1	7.0

* 100 = 16.4 claims per 1,000 insured vehicle years.

Rated Driver Group:
Teenagers = age 20 and below
Other youthful operators = males ages 21-24 and unmarried females ages 21-24
Adults = married females ages 21-24 and all persons age 25 and older

Table 1 also shows a clear pattern of higher injury losses for smaller cars across all rated driver groups. One exception was that midsize sports models had higher claim frequencies than small sports models for some rated driver groups.

Collision Coverage Results

Claim Frequency

Table 2 shows the relative collision claim frequencies for small, midsize, and large cars by body style for the rated driver categories with at least 1,000 insured vehicle years of exposure. Results are shown relative to the all-car adult operator average of 100.

The distribution of collision coverage exposure across rated driver groups was very similar to that of injury coverage exposure. Cars insured for adults represented 88 percent of the total, cars insured for teenagers were about four percent, and cars insured for other youthful operators were almost eight percent.

Cars insured for male teenagers had the most frequent collision claims -- exactly double the frequency of cars insured for adults. Cars insured for male teenagers had higher claim frequencies than did cars insured for adults in

Table 2
Relative Claim Frequency
Collision Coverage -- 1988 Passenger Cars

1988 Passenger Cars	Exposure	Adults	Male Teen-agers	Female Teen-agers	Teen-agers	Other Youthful Male Operators	Other Youthful Female Operators	Other Youthful Operators
All Cars	11,102,855	100*	200	182	190	160	148	153
Small Cars								
Two-Door Models	1,643,854	118	228	195	207	168	152	157
Four-Door Models	1,336,962	108	214	196	203	158	147	151
Station Wagons/ Passenger Vans	229,792	89	169	160	165	123	114	118
Sports Models	244,310	119	261	221	237	182	170	175
Midsize Cars								
Two-Door Models	1,745,062	110	208	184	194	165	148	155
Four-Door Models	2,802,339	94	167	153	160	141	137	138
Station Wagons/ Passenger Vans	304,249	84	139	123	132	122	117	121
Sports Models	368,208	126	246	204	225	182	159	171
Luxury Models	426,673	103	143	137	140	138	131	131
Large Cars								
Two-Door Models	18,348	76	-	-	-	-	-	-
Four-Door Models	775,959	82	127	98	113	115	110	113
Station Wagons/ Passenger Vans	757,277	78	124	113	119	112	109	110
Luxury Models	449,824	92	115	92	104	84	121	105
Percent of Exposure		88.1	1.9	2.4	4.3	3.3	4.3	7.6

* 100 = 8.7 claims per 100 insured vehicle years.

Rated Driver Group:
Teenagers = age 20 and below
Other youthful operators = males ages 21-24 and unmarried females ages 21-24
Adults = married females ages 21-24 and all persons age 25 and older

every body style and size class combination. The frequency of collision claims for cars insured for female teenagers was lower than that of cars insured for male teenagers, but it was still 82 percent higher than that for cars insured for adults. In contrast to the injury claim frequencies presented in Table 1, collision claim frequencies for all body style and size class combinations presented in Table 2 were higher for cars insured for male teenagers than for those insured for female teenagers.

The highest overall collision claim frequencies were for small and midsize sports models. The results for sports models insured for teenagers were particularly high.

The claim frequencies of cars insured for other youthful operators were somewhat less than those for cars insured for teenagers, but they were still 53 percent higher than claim frequencies for cars insured for adults. Again, unlike the injury claim frequencies, 12 of the 13 size class and body style combinations presented in Table 2 show that collision claim frequencies were higher for cars insured for other youthful male operators than for those insured for other youthful female operators. However, the inverse relationship between collision claim frequencies and vehicle size is similar to the injury claim frequency experience.

Table 3
Relative Average Loss Payment Per Claim
Collision Coverage -- 1988 Passenger Cars

1988 Passenger Cars	Exposure	Adults	Male Teen-agers	Female Teen-agers	Teen-agers	Other Youthful Male Operators	Other Youthful Female Operators	Other Youthful Operators
All Cars	11,102,855	100*	124	110	116	114	101	106
Small Cars								
Two-Door Models	1,643,854	100	122	108	113	110	100	104
Four-Door Models	1,336,962	95	114	108	110	105	99	101
Station Wagons/ Passenger Vans	229,792	94	114	116	115	95	95	96
Sports Models	244,310	129	144	113	127	130	108	117
Midsize Cars								
Two-Door Models	1,745,062	100	126	112	118	115	101	107
Four-Door Models	2,802,339	96	116	110	113	106	102	104
Station Wagons/ Passenger Vans	304,249	92	115	120	117	113	108	113
Sports Models	368,208	120	157	120	139	141	106	125
Luxury Models	426,673	131	163	153	159	163	147	153
Large Cars								
Two-Door Models	18,348	106	-	-	-	-	-	-
Four-Door Models	775,959	94	104	115	108	98	99	98
Station Wagons/ Passenger Vans	757,277	79	92	87	90	94	97	96
Luxury Models	449,824	119	138	148	142	182	140	154
Percent of Exposure		88.1	1.9	2.4	4.3	3.3	4.3	7.6

* 100 = $2,116

Rated Driver Group:
Teenagers = age 20 and below
Other youthful operators = males ages 21-24 and unmarried females ages 21-24
Adults = married females ages 21-24 and all persons age 25 and older

Average Loss Payments Per Claim

Relative average collision loss payments per claim are shown in Table 3. Cars insured for teenagers had average loss payments per claim that were 16 percent higher than the average for cars insured for adults. The average loss payment per claim for cars insured for other youthful operators was about six percent higher than that for cars insured for adults.

Again, for all cars, the average loss payment per claim for cars insured for male teenagers was higher than that for cars insured for any of the other rated driver groups. It was 24 percent higher than that for cars insured for adults. Compared with the adult group, the average loss payment per claim was 10 percent higher for cars insured for female teenagers. The pattern of higher losses for cars insured for male teenagers throughout the size class and body style groups was not as consistent as it was for claim frequency. Cars insured for female teenagers registered higher relative average loss payments per claim in several vehicle categories.

Overall, luxury models and sports models compiled the highest average loss payments per claim.

Average Loss Payments Per Insured Vehicle Year

The collision coverage average loss payments per insured vehicle year by rated driver group are displayed in Figure 3. The highest collision losses were for cars insured for male teenagers. Results for these vehicles were almost two and one-half times those for cars insured for adults. In contrast to the injury results, cars insured for female teenagers had substantially lower collision loss levels than did cars insured for male teenagers. However, losses for cars insured for female teenagers were still double those for cars insured for adults. Losses for cars insured for other youthful male operators had higher losses than those insured for other youthful female operators.

Figure 3
Collision Results by Rated Driver Group
Relative Average Loss Payments Per Insured Vehicle Year

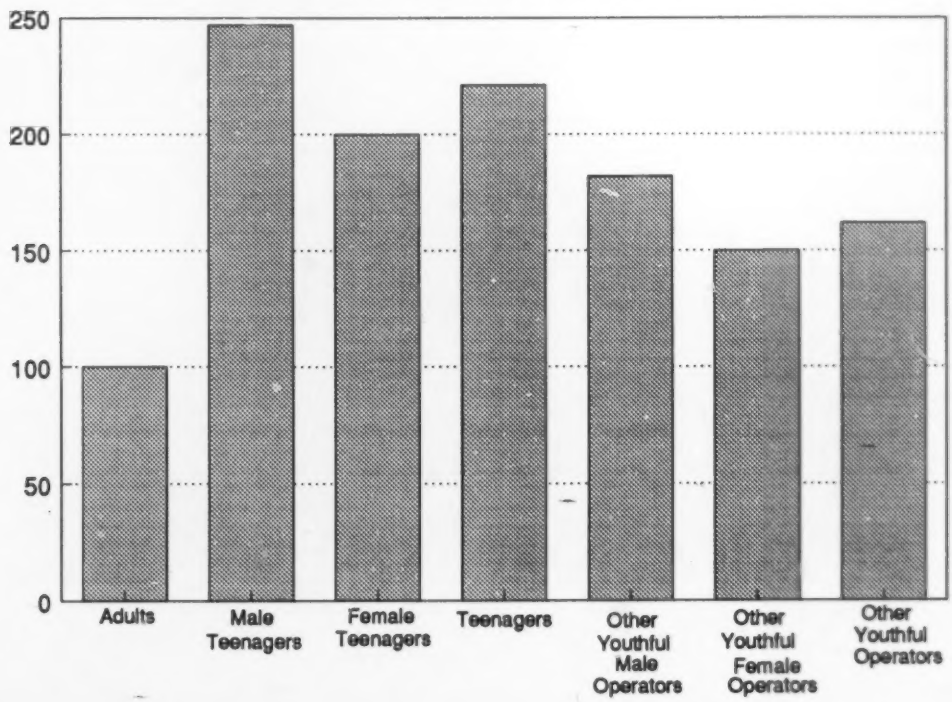

Table 4 shows the relative average collision loss payments per insured vehicle year for small, midsize, and large cars by size class for each rated driver group. Except for large luxury models, cars insured for male teenagers had the highest losses in each vehicle group. Losses for small and midsize sports models insured for male teenagers were almost four times the overall losses. The pattern of lower collision loss levels for cars insured for female teenagers, compared with cars insured for male teenagers, was reflected throughout.

Collision losses for three rated driver groups (all teenagers, all other youthful operators, and adults) were highest for small and midsize sports models and lowest for large station wagons/passenger vans.

Table 4
Relative Average Loss Payment Per Insured Vehicle Year
Collision Coverage -- 1988 Passenger Cars

1988 Passenger Cars	Exposure	Adults	Male Teen-agers	Female Teen-agers	Teen-agers	Other Youthful Male Operators	Other Youthful Female Operators	Other Youthful Operators
All Cars	11,102,855	100*	247	200	221	182	150	162
Small Cars								
Two-Door Models	1,643,854	118	277	210	234	185	152	163
Four-Door Models	1,336,962	102	243	213	224	165	146	153
Station Wagons/ Passenger Vans	229,792	83	193	186	190	117	108	112
Sports Models	244,310	153	377	250	301	237	183	204
Midsize Cars								
Two-Door Models	1,745,062	111	263	206	230	189	149	166
Four-Door Models	2,802,339	90	194	168	181	149	140	143
Station Wagons/ Passenger Vans	304,249	77	160	148	154	139	127	137
Sports Models	368,208	151	385	246	313	257	168	215
Luxury Models	426,673	135	232	210	222	224	192	201
Large Cars								
Two-Door Models	18,348	81	-	-	-	-	-	-
Four-Door Models	775,959	77	132	113	122	112	109	110
Station Wagons/ Passenger Vans	757,277	62	113	98	107	105	105	105
Luxury Models	449,824	110	159	137	147	153	169	162
Percent of Exposure		88.1	1.9	2.4	4.3	3.3	4.3	7.6

* 100 = $185

Rated Driver Group:
Teenagers = age 20 and below
Other youthful operators = males ages 21-24 and unmarried females ages 21-24
Adults = married females ages 21-24 and all persons age 25 and older

APPENDIX A

Definitions

Average Loss Payment per Claim -- The total of all loss payments made for the claims for a group of vehicles, divided by the number of claims paid.

Average Loss Payment per Insured Vehicle Year -- For a group of vehicles, the product of Claim Frequency and Average Loss Payment per Claim, expressed as dollars per insured vehicle year. It should be noted that this definition differs from the commonly used insurance term, pure premium, but yields similar results.

Claim Frequency -- The number of claims for a group of vehicles, divided by the exposure for that group; expressed as claims per one hundred or one thousand insured vehicle years.

Collision Coverage -- As defined in insurance contracts, the coverage under which people insure their own vehicle against loss caused by collision.

Deductible Amount -- That portion of the collision or theft damage cost borne by the policyholder. For computing results, deductible amounts are split into two groups, a low deductible group and a high deductible group.

Exposure -- The time interval an individual vehicle is insured. Exposure for a group of vehicles is expressed in units of insured vehicle years.

First-Party Coverage -- An insurance coverage under which the policyholder collects compensation for his losses from his own insurer regardless of fault.

Loss Payment -- That portion of the insurance loss cost borne by the insurer; in general, the total loss cost minus the deductible amount.

No-Fault Auto Insurance -- An auto insurance plan in which each driver/owner accepts financial responsibility for some or all losses sustained by himself, pedestrians hit by him, and occupants of his own vehicle in return for which he enjoys some immunity from liability for losses to third-party persons.

Operator Age Group -- The factor that distinguishes those vehicles with a youthful rated driver from those vehicles without a youthful rated driver (see Youthful Operator).

Personal Injury Protection (PIP) Coverage -- First-party no-fault coverage in which an insurer pays, within the specified limits, the medical, hospital, and other expenses of the insured, others in his vehicle, and pedestrians struck by him.

The personal injury protection coverages reported in this study were based on data from the 19 states and the District of Columbia listed below.

Personal Injury Protection (PIP) Coverages States:

Colorado	Michigan
Connecticut	Minnesota
Delaware	New Jersey
District of Columbia	New York
Florida	North Dakota
Georgia	Oregon
Hawaii	Pennsylvania
Kansas	South Carolina
Kentucky	Texas
Maryland	Utah

Rated Driver -- The driver who, for insurance purposes, is considered to represent the greatest loss potential for the insured vehicles.

Theft Coverage -- The coverage under which people insure their own car against loss caused by partial or total theft.

Youthful Operator -- All males under 25 years of age and all unmarried females under 25 years of age.

SELECTED PUBLICATIONS

Insurance Injury Report, Passenger Cars, Cargo Vans, Pickups, and Utility Vehicles, September 1991.

Insurance Collision Report, Passenger Cars, Vans, Pickups, and Utility Vehicles, 1990 Models: One Year Results, January 1991.

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